

CLAIMS

What is claimed is:

- 5 1. A method of preconcentrating trace analytes by:
 extracting polar and/or non-polar analytes through a sol-
gel extraction medium.
2. A method according to claim 1 wherein said extracting
10 step is further redefined as feeding a sample through a sol-gel coated inner
surface of a tube and extracting the analytes from the sample with the sol-gel
coating.
3. A method according to claim 2 wherein said feeding step
15 is further defined as passing the sample through a capillary tube, the tube
including a sol-gel coated inner surface.
4. A method according to claim 2 wherein said feeding step
20 is further defined as passing the sample through a sol gel monolithic bed.
5. A method according to claim 1 wherein the organic
component of the sol-gel is selected from the group including sol-gel-active
forms and/or derivatives of poly(ethylene glycol),
poly(methylphenylsiloxane), poly(dimethyldiphenylsiloxane),
25 poly(dimethylsiloxane), poly(methylcyanopropylsiloxane), octadecylsilane,
octylsilane, crown ethers, cyclodextrins, calixarenes, dendrimers,
poly(styrene), poly(styrene-divinylbenzene), poly(acrylate), molecularly
imprinted polymers, etc.
- 30 6. A method according to claim 1 further including the step
of thermally desorbing the analytes from the sol-gel extraction medium.

7. A method according to claim 1 further including the step of desorbing the analytes from the sol-gel extraction medium.

5 8. A method according to claim 6 further including the step of applying the extracted analytes to a GC capillary column.

9. A method according to claim 7 further including the step of applying the extracted analytes to a liquid phase separation technique.

10 10. A method according to claim 1 further including the steps of preconditioning the sol-gel prior to said extracting step.

11. A method according to claim 8 wherein said preconditioning step is further defined as simultaneously heating and purging an inert gas over the sol-gel.
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12. A microextraction method including the steps of microextraction polar and non-polar analytes in a sol-gel extraction medium;
20 desorbing the analytes from the sol-gel and analyzing the extracted, desorbed analytes.